

PHENIX WEEKLY PLANNING



5/17/2012
Don Lynch

TECHNICAL
SUPPORT
2012

This Week

- U-U run ended
- Switch to Cu-Au Run
- maintenance access Tuesday: DC West Chamber wire repairs
- Next scheduled maintenance access: 5/23/12?
- sPHENIX design and analysis continues
- 2012 Shutdown prep continues
- Other Business

Next Week

- Cu-Au Run continues
- Next scheduled maintenance access day Wednesday 5/23
- sPHENIX design and analysis continues
- 2012 Shutdown prep continues
- Other Business

Looking Ahead to the 2012 Shutdown

(Continued)

2/1-6/25/2011

Prep for shutdown

- Define tasks and goals
- Analysis and design of fixtures, tools and procedures
- Fabricate/procure tools and fixtures
- Tests, mockups, prototypes
- Receive, fabricate, modify, finish installables
- Review and approval of parts, tools, fixtures and procedures
- Assembly and QA tests
- AH Crane Upgrade (variable speed & wireless remote)

End of Run Party

6/22/2012

Run 12 Ends

6/25/2012

Shutdown Standard Tasks

6/25-7/20/2012

- Open wall, disassemble wall, Remove MuID Collars,
- Move EC to AH, etc.

Disassemble VTX/FVTX services

7/2-7/27/2012

Remove VTX/FVTX and transport to Chemistry Lab

7/30/2012

Remove MMS & MMN vertical East lampshades

7/23-7/27/2012

Summer Sunday (8/5) Prep and teardown

8/1-8/7/2012

Summer Sunday (RHIC)

8/5/12

MuTr South Station 1 work

- Install access (Sta. 1 work platforms)
- Disconnect Cables, hoses etc, ID/label all
- Remove FEE plates and chambers
- Station 2 Terminators and manifold upgrade through access opened by station 1 removal

7/30-8/3/2012

8/6-8/10/2012

8/13-8/17/2012

8/20-8/31/2012

Looking Ahead to the 2012 Shutdown (Continued)

TECHNICAL SUPPORT ZONE

MuTr South Station 1 work (Cont'd)

Clean/install new MuTr Sta. 1 chamber parts and upgrades
(concurrent At RPC Factory)

Re-install chambers and FEE plates

Re-cable, re-hose and test

Repair upgrade, test, reinstall VTX/FVTX

Station 3 North and South (upper half)

re-capacitation and air manifold upgrades

Substation breaker upgrade/test (CAD)

AH utility power distribution upgrade

DC West maintenance (replace window)

RPC stations 1 and 3, north and south maintenance

Other detector maintenance as required

Infrastructure maintenance as required

TBD prototype tasks

pre-run commissioning and prep for run 13

Prep for EC roll in

Roll in EC

Prep IR for run

Pink/Blue/White sheets

Start run 13

8/20/-9/7/2012

9/10-9/14/2012

9/10-9/28/2012

7/23-10/26/2012

7/23-9/30/2012

8/20-9/30

8/20-9/30

9/15-10/15

As required

As required

As required

As required

11/1-12/31/2012

11/12-11/16/2012

11/19-11/23/2012

11/26-12/3/2010

12/3-12/21/201

1/1/2013



New Electrical Work for 2012 Shutdown, not yet scheduled

1. Support CAD replacement of Assembly Hall 480V Fused Switch Panels #8H-1, 8H-2, and 8 EMH1. Coordinate temporary power patch while work is being performed and minimize impact on shutdown work.
2. Add the Assembly Hall Crane lockout/contactors/ indicator light key switch circuit - similar to IR Crane.
3. Add Transient Surge Suppressor to 3 phase power panel on the Central Magnet Bridge.
4. The Gas Mixing House Breaker Panel for the Gas Mixing side is almost out of spare breaker slots and needs to be reviewed for increased capacity panel to replace it.
5. New computer rack replacements/additions for upcoming Run 13 & Rack Room computer infrastructure changes involving power distribution circuit (UPS and normal AC power) re-work.

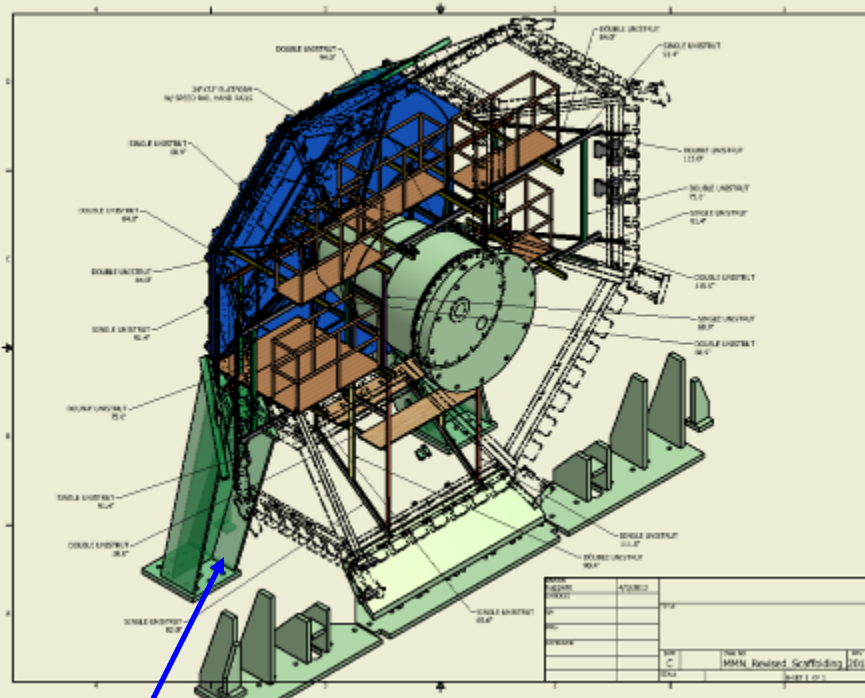
Additional Work for 2012, not yet scheduled

1. Replaced aging magnet hoses (CM only)
2. identify obsolete services passing through sill and remove them.
3. Revisit cover for services coming from IR through sill.
4. Plan for stripping out TEC electronics and services to free up TEC racks.
5. Add limit switch and improved spooling control for window washer cable.



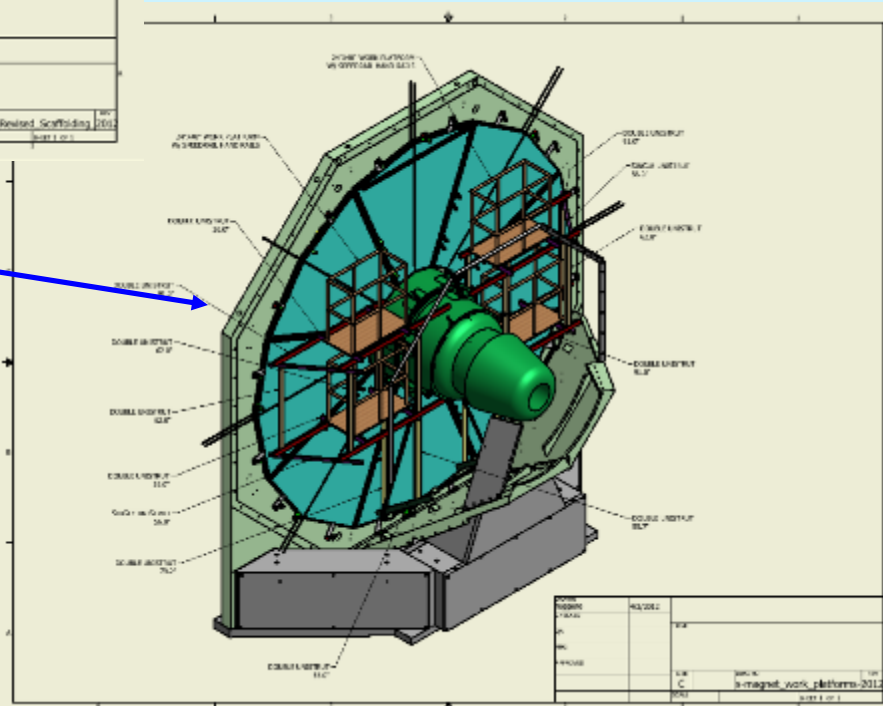
AH Crane variable speed drive
and wireless remote upgrade ??

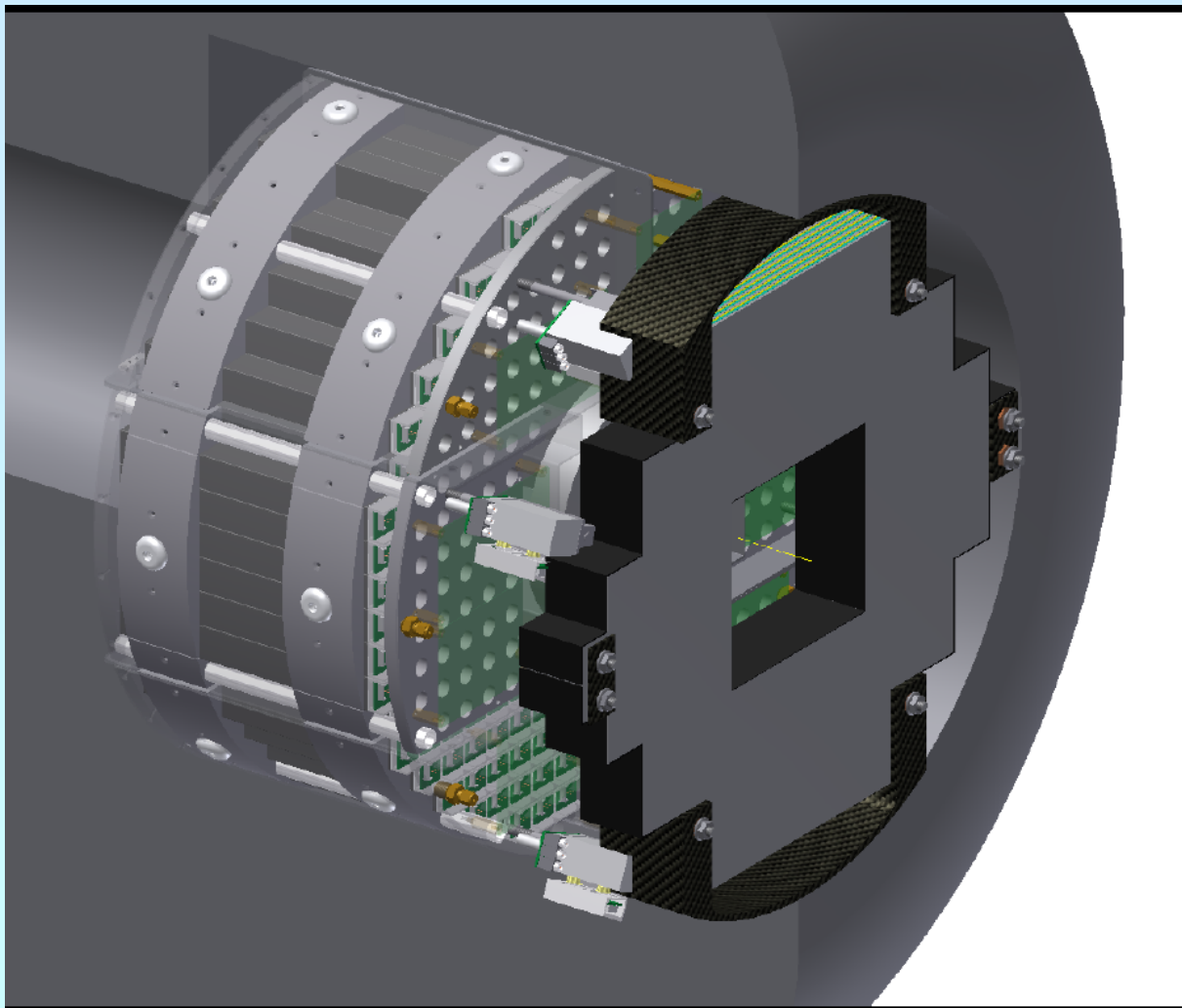




North & South internal
work platforms for next
summer's shutdown

Sent analyses to C-A ESRC
for review last week





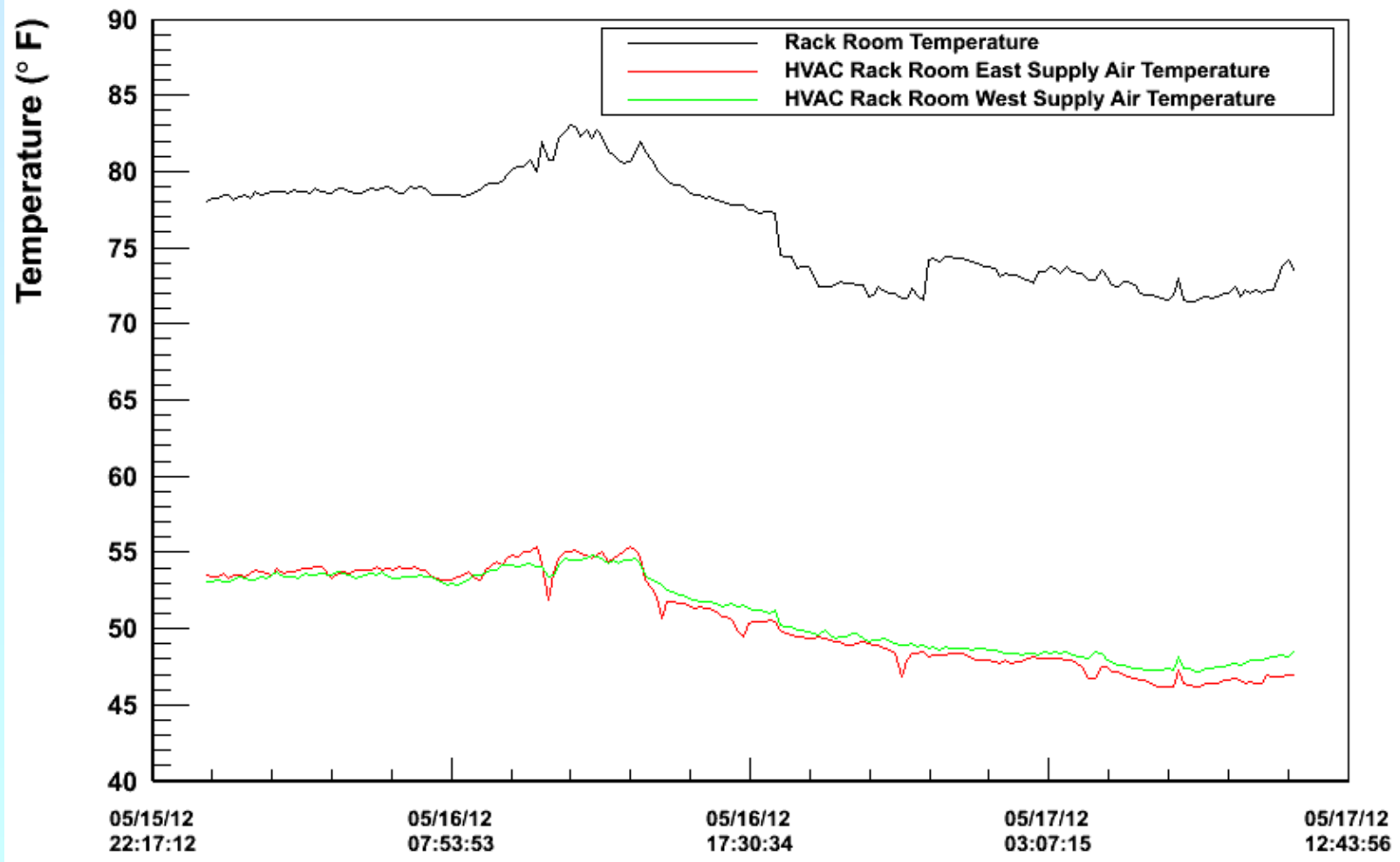
MPC-EX review went well. Expect to be approved by end of June.

Proposed MPC-EX Engineering Design Fabrication and Assembly Schedule

TECHNICAL
SUPPORT
ZON

| | |
|------------------------------------|-------------------|
| Project Approval | 6/4/2012 |
| Engineering Design and Analyses | 6/4/12-10/1/12 |
| Final Design Approval | 10/15/12 |
| Detail Fabrication and Procurement | 10/15/12-4/15/13 |
| Assembly | |
| North | 4/15/13-7/15/13 |
| South | 5/15/13-8/15/13 |
| Inspection and QA Tests | |
| North | 7/15/13-9/15/13 |
| South | 8/15/13-10/15/13 |
| Installation | |
| North | 9/15/13-10/15/13 |
| South | 10/15/13-11/15/13 |
| Commissioning | |
| North | 10/15/13-11/15/13 |
| South | 11/15/13-12/15/13 |

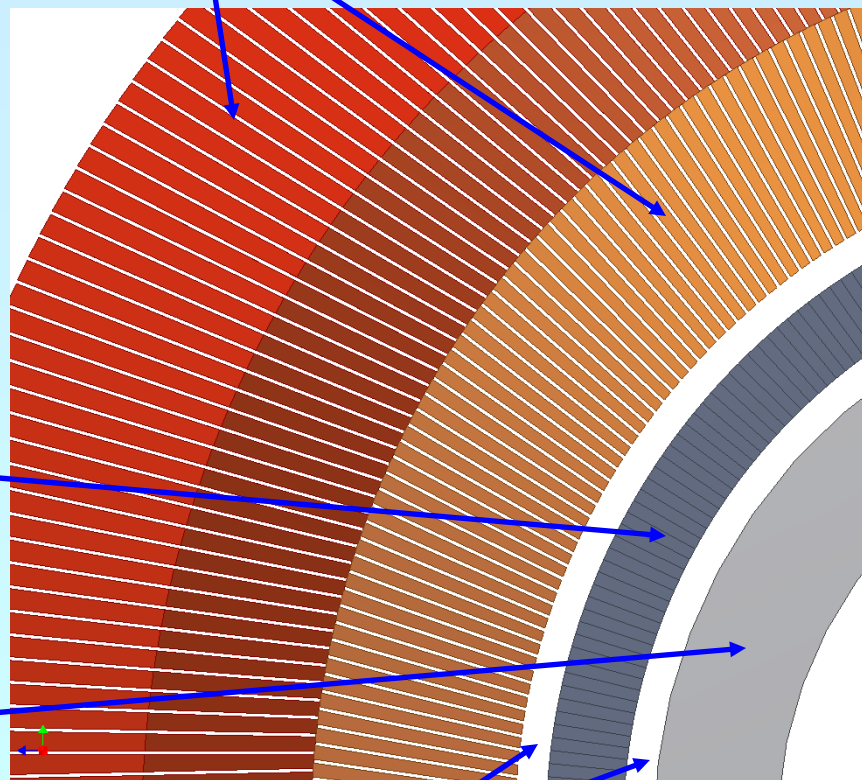
PHENIX Rack Room Temperatures



Inner and outer Hadronic Calorimeters
256 segments each, steel and scintillator
0.9 meter total thickness, ~4.6 meters
long. Note how the outer and inner steel
segments are angled with respect to
radial lines (by 5 degrees, with the inner
HCal steel angled in the opposite
direction of the outer HCal steel). The
inner and outer steel plates are also
offset by a $\frac{1}{2}$ period.

ElectroMagnetic Calorimeter
314 segments, Tungsten
and scintillator 0.1 m th
~2.8 m long

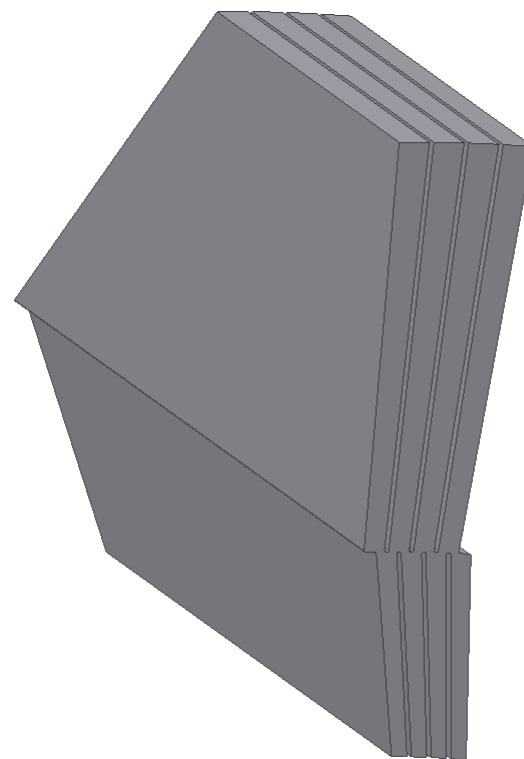
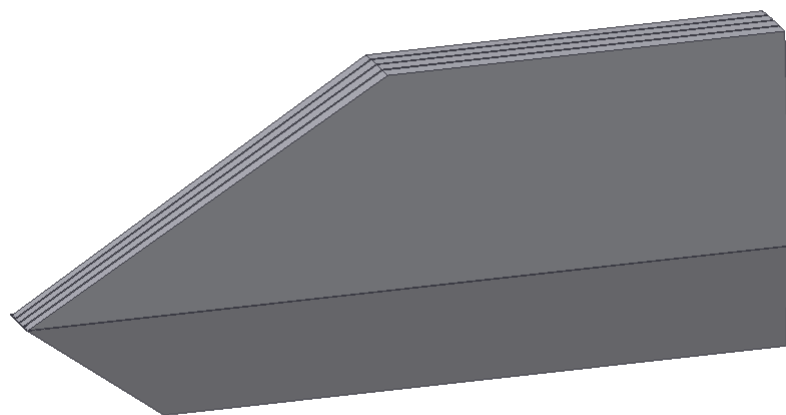
Superconducting solenoid
2 Tesla Magnet and cryostat
.70 m inner radius, .20 m th
~2 m long

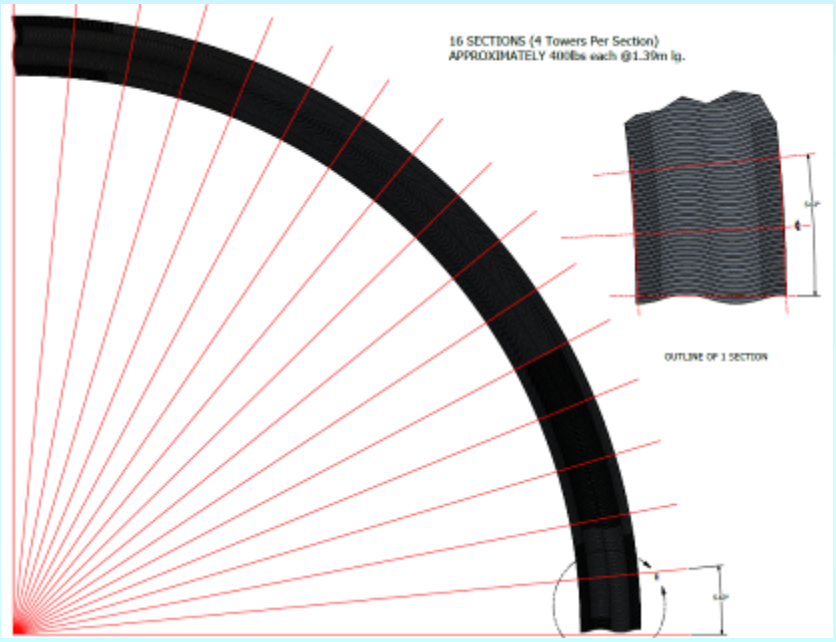
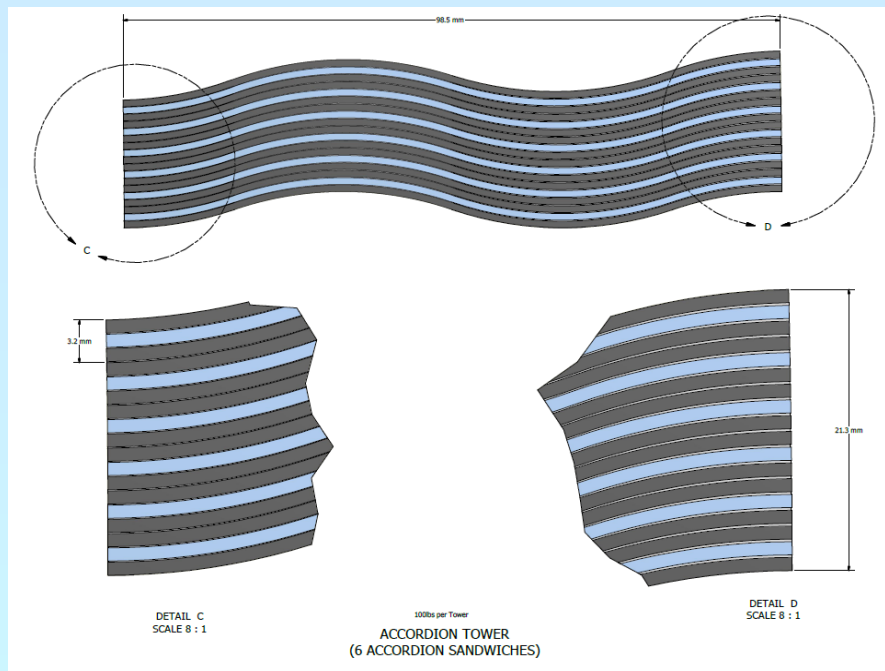
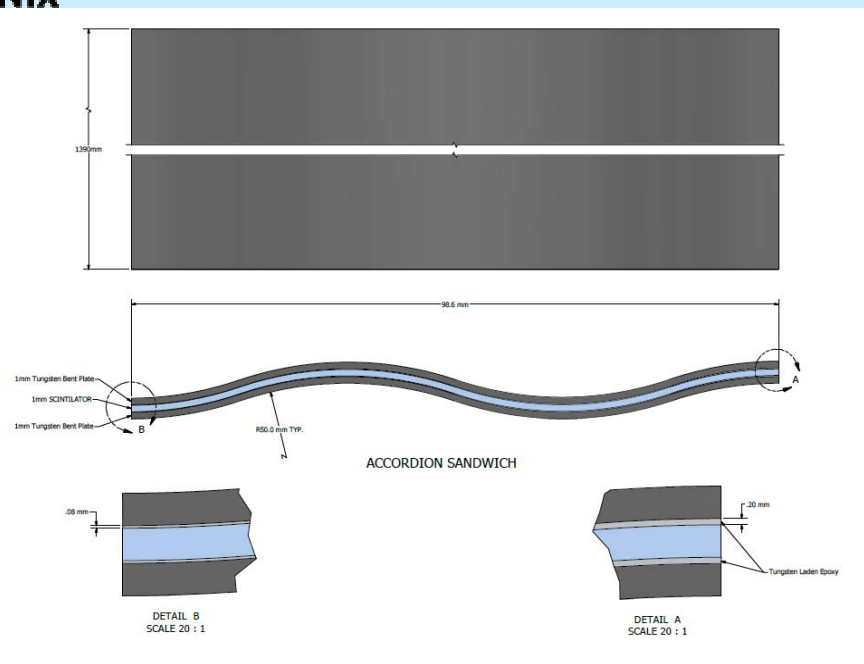


*Note: All dimensions
are current estimates
and subject to change*

Envelope allowance for electronics,
support structure and detector services

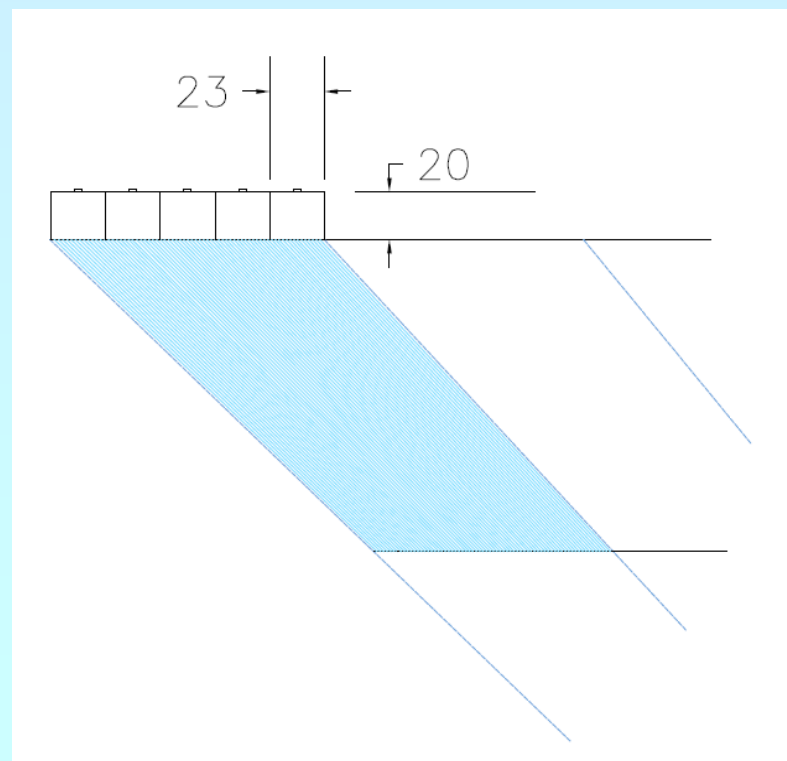
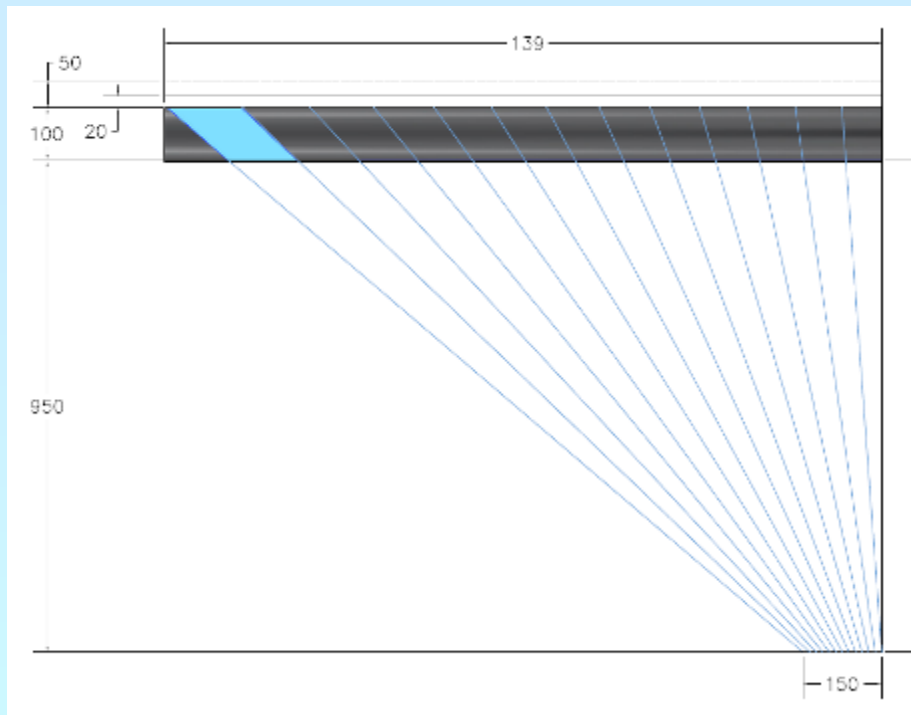
HCal Views

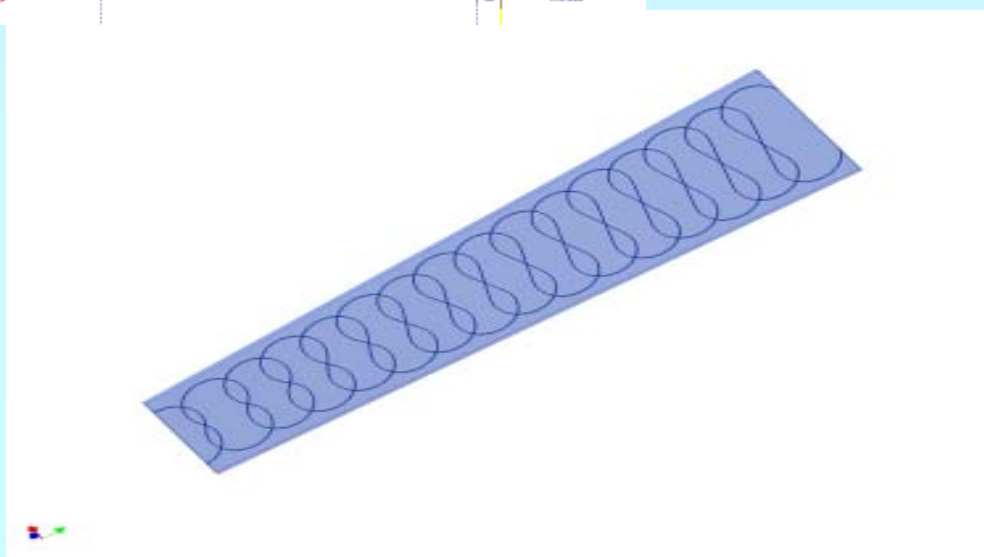
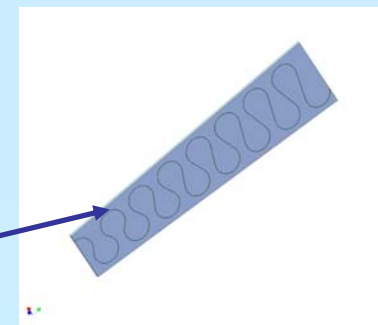
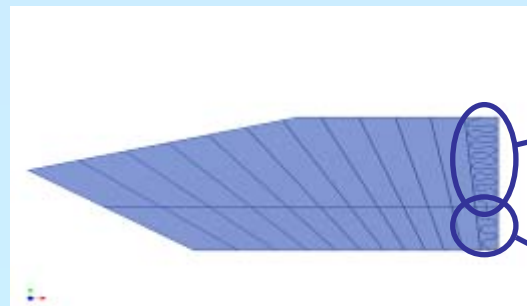




Electromagnetic calorimeter segments using "accordion" shaped scintillators and tungsten plates to optimize detector sampling

Meeting with potntial vendor today

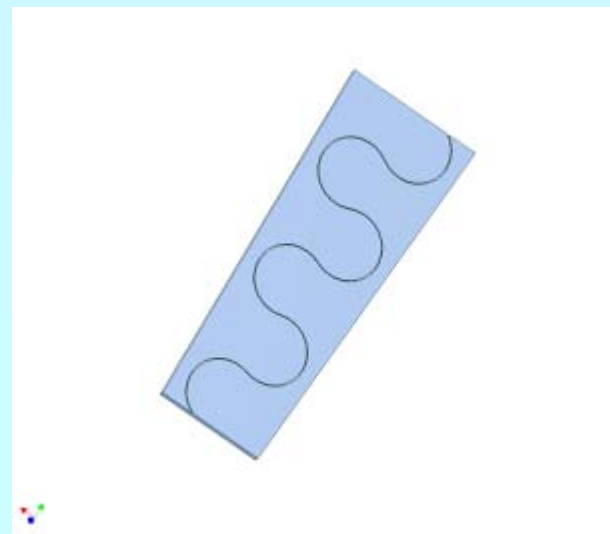
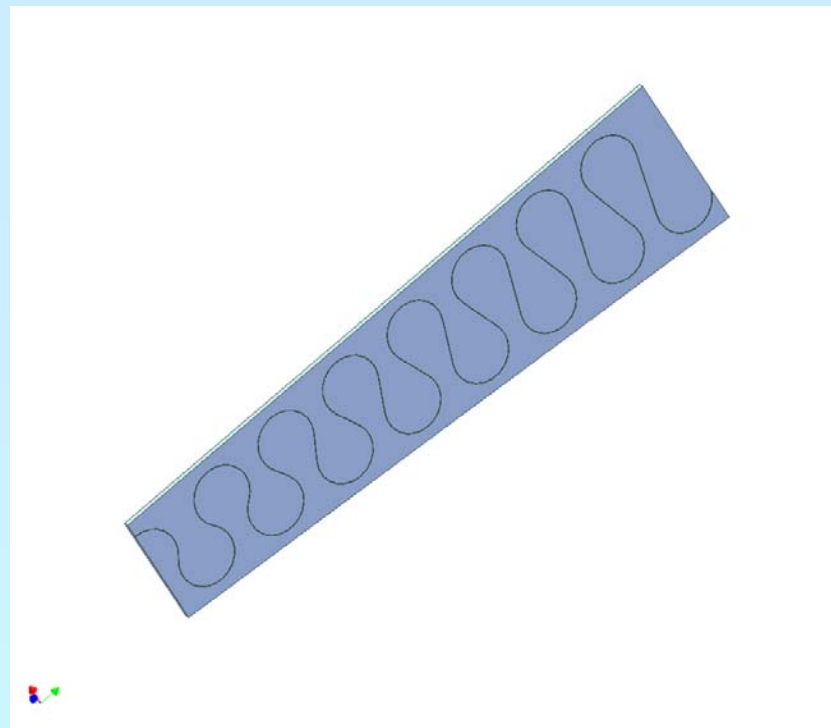


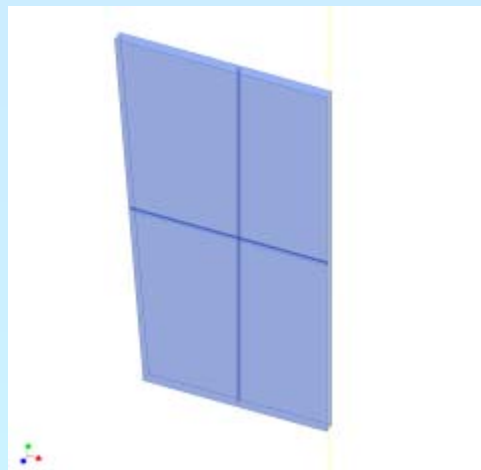
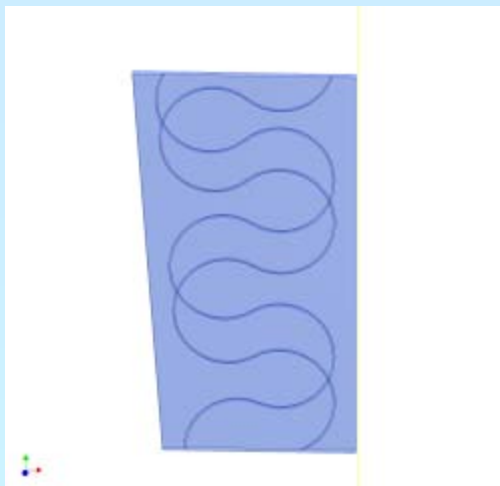


Design Concepts for each
scintillator plate detail:

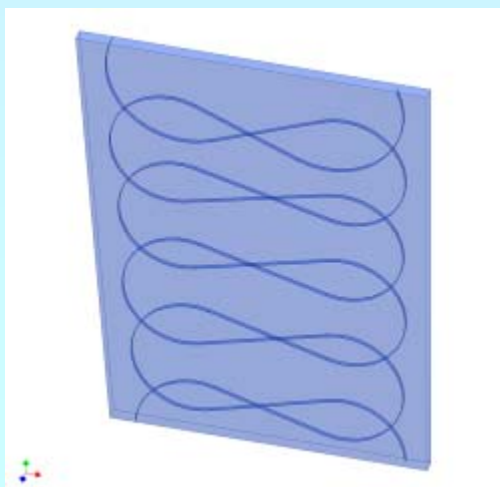
- Each plate has an optic fiber imbedded on both sides (illustrations at right are semitransparent so that the opposing patten can be seen)
- Minimum fiber bend radius is 2.75 cm
- Fiber is serpentine so as to come no closer than 2 cm to itself at any point and no closer than 1 cm to scintillator edges.
- Crossing of fibers in plane view is as close as possible to 90 degrees to minimize overlap.

(Note scintillator sections shown are not transparent..Opposite side fiber is not visible)





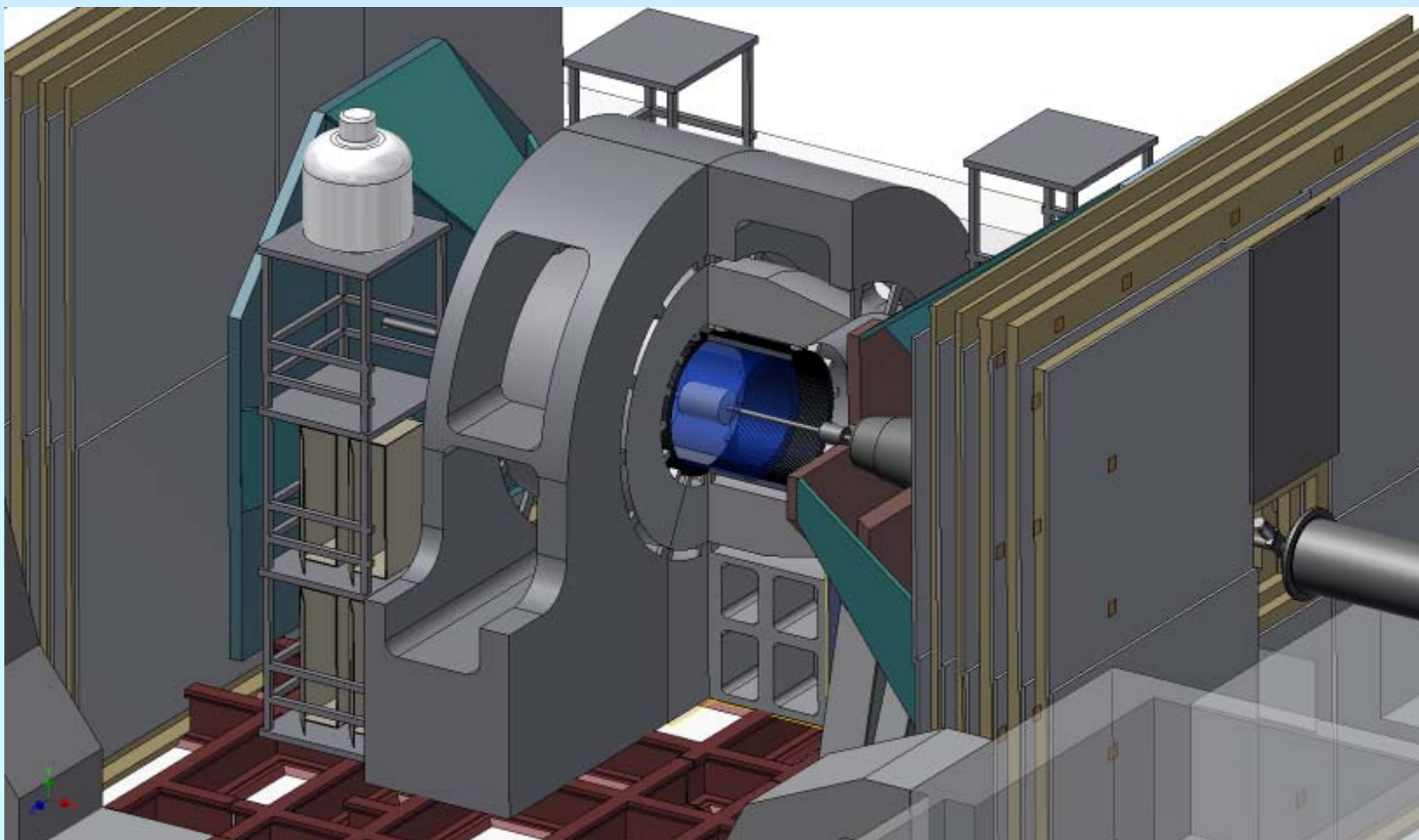
Inner Scintillator prototypes



Outer Scintillator prototypes

sPHENIX overall assembly, integration and maintenance concept

TECHNICAL SUPPORT



1. Configuration Management - New Procedures in progress.
2. Lessons Learned:
 1. Argonne Laboratory: Minor shock from Overhead light fixture
 2. From DOE: Arc Hazard from DC Systems
 3. From DOE: Misinterpretation of Lockout/Tagout Requirements in Work Documents Leads to work performance without Lockout/Tagout
 4. Arc Flash Event (see slides)
3. PPE demonstration room opening this week





Gregory S. Leslie, CSP — PP NAM Field Service OHS Director, March 27, 2012

SCG&E Arc Flash Event

5 KV 1200 Amp Breaker

Racking
Handle



© ABB
2/07/2012 | Slide 2



Residual Damage Behind Where the Person was Standing



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Residual Damage Above the Gear



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40 Cal/cm² Arc Flash Suit



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40 Cal/cm² Arc Flash Suit

40 Cal/cm²
Flash Hood



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40 Cal/cm² Arc Flash Suit



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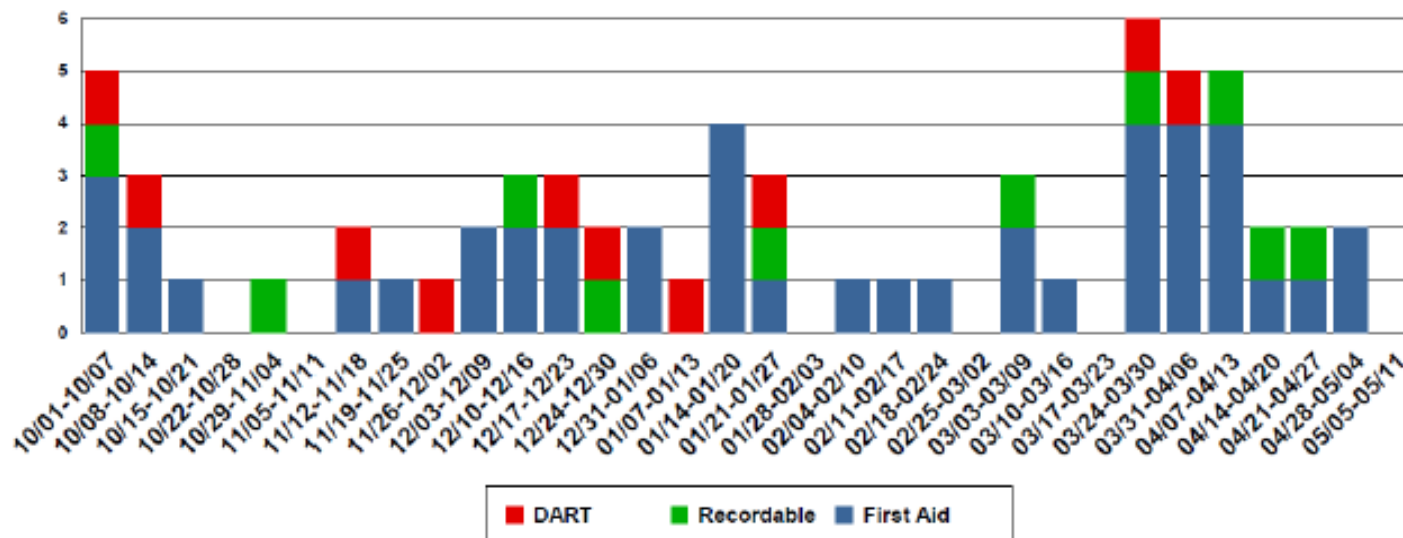
ABB

Investigation On-going

- Speculation: Racking breaker in live while the breaker was closed
- **NO** Arc Flash Hazard Analysis
- Incident Energy Unknown
- SCE&G employee hospitalized for a one week period
- Arc Flash PPE saved his life!

| Recent Events | | |
|---------------|----------------|---|
| 5/7/12 | Non-Reportable | An experimenter in Bldg 480 was using an ozone generator when the ozone detector alarm sounded. The ozone detector was set to alarm at 0.1 ppm, which is the threshold for an 8-hr occupational exposure. The alarm cleared within 15 minutes. The worker called Fire/Rescue for assistance. Fire/Rescue did not detect any atmospheric abnormalities. Fire/Rescue advised the worker to leave the area, and the room was secured. (Event Link) |
| 5/7/12 | Non-Reportable | Fire/Rescue responded to a fire alarm in the NEBA section of Building 912. Fire fighters investigated and found faulty batteries in the HSSD system. No injuries or damage are reported. (Event Link) |
| 5/5/12 | Non-Reportable | Fire/Rescue reported to a fire alarm at 10:37 AM. There was no fire, or other event discovered which triggered the alarm. The system was reset and restored to operation. (Event Link) |
| 5/3/12 | Non-Reportable | From approximately 21:30-22:30 on May 3 rd , BNL experienced a loss of telephone service outside of the lab (internal 4 digit dialing still worked). A similar outage was experienced from approximately 23:30-00:30. It was subsequently determined that our new telephone service provider, DNS, intentionally brought down the service as part of a troubleshooting effort, however failed to notify us of their plan to do so. During the time that telephone service was out, LP was unable to contact offsite resources to assist in the event of fire or other emergency using the BNL telephone system (cell service was still functional). Internal lab phone service was still operational, but outside lines were not available. (Event Link) |

Injuries Per Week (FY) As of 5/11/2012



Injury Status:

FY12 YTD: DART – 10, TRC – 20, First Aid – 43

FY11: DART – 27, TRC – 42, First Aid – 45

FY10: DART – 19, TRC – 33, First Aid – 52

FY12 Injury Listing: <https://intranet.bnl.gov/esh/shsd/seq/OccInj/BNLIInjuries.aspx>

Recent Injuries

| | | |
|---------|------------|--|
| 5/3/12 | First Aid | An employee scraped his leg against the metal housing of a piece of equipment. At the OMC, first aid was given. |
| 5/2/12 | First Aid | An employee was injured while running to talk to his supervisor. At the OMC, first aid was given. |
| 4/27/12 | Recordable | UPDATE: An employee was injured lifting and dumping paper. At the clinic, first aid was given. However, physical therapy was later prescribed, making this recordable. |
| 4/20/12 | Recordable | UPDATE: An employee reported soreness in his hands, arms, and shoulders from work. At the clinic, first aid was given. However, classification for this injury was changed two weeks later when he received a prescription for physical therapy. |
| 3/27/12 | First Aid | A subcontractor per diem worker was injured and was transported to the ER. At the OMC, a metal speck was observed in the eye. |

Where To Find PHENIX Engineering Info



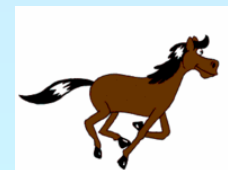
Preakness This Saturday,



Which Horse Will it be?

Below are the probable starters for Saturday's Preakness Stakes.

Bodemeister
Cozzetti
Creative Cause
Daddy Nose Best
I'll Have Another
Optimizer
Pretension
Teeth of the Dog
Tiger Walk
Went the Day Well
Zetterholm



http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

